

In the claims:

For the Examiner's convenience, all pending claims are presented below with changes shown in accordance with the mandatory amendment format.

1. (Currently Amended) A method, comprising:

~~interacting<sub>2</sub> by a learning component of a server of a network<sub>2</sub> with one or more clients and an environment of the network;~~

conducting<sub>2</sub> by ~~[[the]]~~ a learning component of a server of a network<sub>2</sub>, different trials of one or more options in different states ~~[[for]]~~ of a network communication between a client and the server via a protocol of the network communication, wherein each trial is defined by a combination of the one or more options occurring at a particular state of the network communication;

receiving<sub>2</sub> by the learning component<sub>2</sub> performance feedback for the different trials as rewards; and

utilizing<sub>2</sub> by the learning component<sub>2</sub> the different trials and their associated resulting rewards to improve a decision-making policy ~~associated with~~ made by an option negotiation component of the server for negotiation of [[the]] one or more options, wherein the one or more options defining specifications of the network communication between the server and the client.

2. (Currently Amended) The method of claim 1, further comprising uploading, based on the different trials and rewards, by the learning component ~~an optimum set of options associated with an observed configuration of the server, the client, and a network environment enabling the network communication between the server and the client based on~~

~~the different trials and rewards and observed configurations of the environment associated with the optimum set of options~~ to a centralized place.

3. (Original) The method of claim 2, wherein one or more other servers download from the centralized place the optimum set of options to utilize as an initial point to start a new learning process in the environment of the one or more other servers.

4. (Currently Amended) The method of claim 1, wherein the option negotiation component applies a reinforcement learning algorithm to improve the decision-making policy ~~associated with the server~~ for negotiation of the one or more options.

5. (Original) The method of claim 4, wherein the reinforcement algorithm utilizes a Q-learning method.

6. (Original) The method of claim 5, wherein the Q-learning algorithm iteratively calculates value functions of an optimal policy for option selection by the option negotiation component.

7. (Currently Amended) The method of claim 1, wherein the server is ~~option negotiation component is part of~~ a trivial file transfer protocol (TFTP) server.

8. (Currently Amended) An apparatus, comprising:

an option negotiation component to select one or more options for a communication protocol, receive rewards as performance feedback associated with the selection of the one or more options, and adjust the selection of the one or more options based on the rewards; and

a file transfer component to transfer a file utilizing an optimum set of the one or more options selected by the option negotiation component based on the rewards and adjusted selections.

9. (Original) The apparatus of claim 8 wherein the option negotiation component applies a reinforcement learning algorithm that determines the one or more options to select, the performance feedback for the selection, and the adjustment of the selection.

10. (Original) The apparatus of claim 9, wherein the reinforcement algorithm utilizes a Q-learning algorithm.

11. (Original) The apparatus of claim 10, wherein the Q-learning algorithm iteratively calculates value functions of an optimal policy for option selection by the option negotiation component.

12. (Original) The apparatus of claim 8, wherein the option negotiation component and the file transfer component are components of a trivial file transfer protocol (TFTP) server.

13. (Original) The apparatus of claim 8, wherein the option selection component further to upload the optimum set of options and associated configurations of an environment associated with the optimum set of options to a centralized place.

14. (Original) The apparatus of claim 13, wherein one or more servers download the optimum set of options for an environment similar to the associated environment.

15. (Currently Amended) A system, comprising:

a network environment; and  
a server communicatively coupled to the network environment via a network interface and including:

an option negotiation component to select one or more options for a communication protocol, receive rewards as performance feedback associated with the selection of the one or more options, and adjust the selection of the one or more options based on the rewards; and

a file transfer component to transfer a file utilizing an optimum set of the one or more options selected by the option negotiation component based on the rewards and adjusted selections.

16. (Original) The system of claim 15, wherein the option negotiation component applies a reinforcement learning algorithm that determines the one or more options to select, the performance feedback for the selection, and the adjustment of the selection.

17. (Currently Amended) The ~~system apparatus~~ of claim 16 ~~[[9]]~~, wherein the reinforcement algorithm utilizes a Q-learning algorithm.

18. (Currently Amended) The ~~system apparatus~~ of claim 17 ~~[[10]]~~, wherein the Q-learning algorithm iteratively calculates value functions of an optimal policy for option selection by the option negotiation component.

19. (Original) The system of claim 15, wherein the server is a trivial file transfer protocol (TFTP) server.

20. (Original) The system of claim 15, wherein the option negotiation component uploads an optimum set of options based on the different trials and rewards and observed configurations of the environment associated with the optimum set of options to a centralized place.